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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/608,779	06/27/2003	Paul E. Amundsen	0100.2061-000	8118
21005	7590	07/12/2004	EXAMINER	
HAMILTON, BROOK, SMITH & REYNOLDS, P.C. 530 VIRGINIA ROAD P.O. BOX 9133 CONCORD, MA 01742-9133			DOERRLER, WILLIAM CHARLES	
			ART UNIT	PAPER NUMBER
			3744	

DATE MAILED: 07/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/608,779

Applicant(s)

AMUNDSEN ET AL.

Examiner

William C Doerrler

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-61 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-5,7-13,15-17,19-24,26,27,29-40,42-48,50-56 and 59-61 is/are rejected.
- 7) ☒ Claim(s) 2,6,14,18,25,28,41,49,57 and 58 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 4-8-2004.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Claim Objections***

Claims 10 and 42 are objected to because of the following informalities: In claim 10, line 2, "either" is confusing since it follows only one option. In claim 42, "the time less than the discharge time" lacks clear antecedent basis since "time less than the discharge time" was claimed in claim 41, not claim 40 from which claim 42 depends. Should claim 42 depend from claim 41? Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 50 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 50 is self-dependent.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1,3-5,7,8,10-13,15-17,19,20,22-24,26,27,29,30 and 32-34 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamartino et al '863.

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Yamartino et al disclose in column 9 lines 29-47 that a delay state 106 is made after unsafe conditions are detected to confirm temperature readings and if the readings are confirmed to be in the unsafe range then a purge gas valve is opened after the delay. Column 5 line 50 states that a purge gas exhaust valve is also controlled. It is assumed to be inherent that this valve must open with or immediately following the purge valve to permit the hydrogen to be purged. Line 25 of column 5 states that the purge valve is normally closed. The following statements states only that the purge exhaust valve is coupled to the cryopump to allow gas to escape. It is considered inherent that this valve is normally open to avoid a potentially dangerous overpressure situation in a power failure.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

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consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 9,21 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamartino et al in view of Gaudet et al '316.

Yamartino et al disclose applicants' basic inventive concept, a cryopump with a time delay controller for the purge valve, substantially as claimed with the exception of determining after a power failure, whether or not the cryopump was in regeneration mode prior to the failure and determining if all or part of the regeneration is possible. Gaudet et al '316 shows this feature to be old in the cryopump art in column 13 line 40- column 14 line 4. It would have been obvious to one of ordinary skill in the art at the time of applicants' invention from the teaching of Gaudet et al to modify the cryopump of Yamartino et al by determining the operating state of the cryopump prior to a power failure and determining if a full or partial regeneration is possible or desirable to ensure safe and efficient operation following a power failure.

Claims 35-40,42-48,51-56,59,60 and 61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamartino et al in view of Limon.

Yamartino et al discloses applicants' basic inventive concept, a cryopump with a delay between determining an unsafe condition and opening a purge valve, substantially as claimed with the exception of specifying the use of a capacitor to control the delay. Limon shows capacitors to be old in the delay control art in column 3 lines 31-65. It would have been obvious to one of ordinary skill in the art at the time of applicants' invention from the teaching of Limon to modify the cryopump of Yamartino et al by using

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a capacitor's discharge to control the time delay to provide efficient and controllable delay which is charged while the power is on. In regard to claims 40,48 and 56, the amount of the delay is seen as a matter of design choice to be set by the user to ensure proper purging of the cryopump chamber.

***Allowable Subject Matter***

Claims 2,6,14,18,25,28,41,49,57 and 58 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. McKeon, Diercks et al and Helwig show timing circuits using capacitors to control delays. Buonpane et al, Morishita et al, Okumura et al, Haefner et al, Weeks et al and Andeen et al show control systems for cryopumps.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William C Doerrler whose telephone number is (703) 308-0696. The examiner can normally be reached on Monday-Friday 6:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Denise Esquivel can be reached on (703) 308-2597. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



William C Doerrler  
Primary Examiner  
Art Unit 3744

WCD